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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/882,006

06/15/2001

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YOR9-2001-0229
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03/29/2004

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EXAMINER -

LAMARRE, GUY J

ART UNIT

PAPER NUMBER

2133

DATE MAILED: 03/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/882,006

Applicant(s)

MCCARLEY ET AL.

Examiner

Guy J. Lamarre, P.E.

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

FILE

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2-3
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Applicant's IDS of 15 June 2001, pre-amendment/ IDS of 9 June 2003 have been entered. The Examiner has considered the IDS. All further correspondence regarding this application should be directed to Art Unit 2133.

1.1 Pursuant to 35 USC 131, **Claims 1-15** are presented for examination.

Specification

2. The disclosure is objected to because of the following informalities:

It is not clear to the Examiner where $a_j(X_i)$ comes from in, e.g., page 4 line 10, page 5 line 3; or what follows 'histogram said' in page 5 line 12; or how a byte sequence has plural states including an ASCII state in page 6 line 19; or whether 'transmission matrix should be transition matrix in page 7 line 5; how ASCII is followed by GB1 when GB1 follows ASCII in Fig. 1 as per page 8 line 8; or 1st double-byte byte or 2nd double-byte byte as per page 9 line 11.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3.1 **Claims 1-11, 15** are rejected under 35 U.S.C. 101 as claiming a mathematical formula or algorithm. Applicant is advised to modify limitations of said claims as being incorporated or embedded in hardware or readable machine medium.

Claim Objections

4. The listed claims are objected to because of the following informalities:

Claim 1 line 5 should read 'utilizing said most probable state...'

It is not clear to the Examiner, in Claim 3 line 1, what is meant by “an ASCII state is also designated as a noise state.” Claim 3 line 1 should read ‘claim 1’.

It is not clear to the Examiner, in Claim 6 last line, what is meant by “sigma states.”

Claim 7 should depend on claim 6.

Claim 15 line 3 should read ‘...as [the] a noise.’

It is also not clear to the Examiner, in Claim 4 line 2, what “X₀ and S₀” stand for.

Appropriate correction is required.

Claim Rejections - 35 USC § 112 SECOND PARAGRAPH

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5.0 **Claims 1-15** stand rejected under 35 USC § 112 SECOND PARAGRAPH for failing to particularly point out and distinctly define the subject matter which the applicant regards as his invention.

5.1 **As per Claims 1, 12, 15 and intervening claims:** For example:

It is not clear to the Examiner what is meant by defining state for byte sequence.

It is not clear to the Examiner why byte states are designated as noise states when the byte sequence is valid. It appears that an error must first be detected for said erroneous byte sequence to call for said noise state designation.

Claim Rejections - 35 USC ‘ 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6.0 This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

6.1 **Claims 1-15** are rejected under 35 U.S.C. 103(a) as being unpatentable over MAKINO (US Patent No. 5,898,385; 27 Apr. 1999) in view of **Tugnait** 'Adaptive estimation and identification for discrete systems with Markov jump parameters;' Oct 1982; IEEE; pages 1054 - 1065, vol. 27).

As per Claims 1-3, 12, 15, Makino substantially discloses ECC means for sequence or text or alphanumeric (in ASCII representation) data (col. 1 line 21 et seq.) or Chinese characters or mixed Chinese/ alphanumeric characters wherein errors are detected and corrected in said sequence, e.g., in col. 6 line 1 et seq., and Figs. 1-6 and related description, comprising means for: receiving a byte sequence, generating or defining a plurality of states or ECC means for said byte sequence; transmitting said byte sequence along with ECC means or plurality of states, receiving said byte sequence along with ECC means or plurality of states, detecting errors therein and designating one or more noise states from among the plurality of states in said sequence where errors probably are located; generating a most probable state sequence for the byte sequence; utilizing said state sequence to identify all noise or errors in the byte sequence; and localizing and correcting (col. 4 line 35) said noise or errors in said noise states in Fig. 4; means to state transition in col. 4 line 13 et seq., storage means via code or look-up table in col. 1 line 27; means to process sequence based on probabilistic or statistical analysis in col. 3 line 50 et seq.; **Markov or state transition means** in col. 4 line 11 et seq.; means to select valid sequence or characters of length or state based on segmentation parameters in Figs. 2-3 & 6, and col. 1 line 30, col. 2 line 42 et seq., e, g., *"the signal processing means recognizes special codes within received data that has been segmented by character segmentation at two or more different bit lengths, and when a special code is recognized, segments the received data that follows this special code on the basis of character*

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segmentation at the bit length specified by the special code. On this case, it may be adapted that the radio paging receiver segments received data in units of 4 bits, 8 bits and 16 bits or in units of 4 bits, 7 bits and 14 bits".

Not specifically described in detail by **Makino** is the step whereby **Markov or state transition means comprises a transition probability matrix**.

However Tugnait, in an analogous art, discloses an estimation means for **Markov or state transition means with a transition probability matrix**. {See **Tugnait**, Id., Abstract.}. **Therefore**, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the procedure of **Makino** by including therein **transition probability matrix computation means**, as taught by **Tugnait**, because such modification would provide the procedure of **Makino** with a method whereby estimation of the Markov transition probabilities is made consistent. {See **Tugnait**, Id., page 1055 col. 1 para. 2.}

As per Claims 4-11 and 13-14, Tugnait discloses conditional probability means in page 1055 col. 1 para. 4 – page 1061.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

7.1 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guy J. Lamarre, P.E., whose telephone number is (703) 305-0755. The examiner can normally be reached on Monday to Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert De Cady can be reached on (703) 305-9595. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

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may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Guy J. Lamarre, P.E
Patent Examiner
3/19/04
